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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,679	08/18/2003	Xavier Paliard	PP01612.009 (2300-1612.10	4593

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EXAMINER	
LI, BAO Q	

ART UNIT	PAPER NUMBER
1648	

DATE MAILED: 04/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/643,679	PALIARD ET AL.	
	Examiner	Art Unit	
	Bao Qun Li	1648	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 January 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8 and 23-42* is/are pending in the application.

4a) Of the above claim(s) *1,7 and 23-42* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-6 and 8* is/are rejected.

7)☒ Claim(s) *2 and 8* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08/18/2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *08/18/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of group II, claims 2-6 and 8 in the reply filed on 01/27/2005 is acknowledged.

Priority

The later-filed application must be an application for a patent for an invention which is also disclosed in the prior application (the parent or original nonprovisional application or provisional application); the disclosure of the invention in the parent application and in the later-filed application must be sufficient to comply with the requirements of the first paragraph of 35 U.S.C. 112. See *Transco Products, Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 32 USPQ2d 1077 (Fed. Cir. 1994).

2. Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged. However, the provisional application upon which priority is claimed fails to provide adequate support under 35 U.S.C. 112 for claims 2-6 and 8 of this application. Because the claimed priority document has a disclosure of a fusion protein comprising NS3, NS4, NS5 and core polypeptide of an HCV, the claimed priority has been denied.

3. This application appears to be a division of Application No. 10,357,619, filed Feb. 03, 2003 or application SN. 09,698,874 filed on October 27, 2000. A later application for a distinct or independent invention, carved out of a pending application and disclosing and claiming only subject matter disclosed in an earlier or parent application is known as a divisional application or "division." The divisional application should set forth the portion of the earlier disclosure that is germane to the invention as claimed in the divisional application. However, in the instant case, the claimed fusion protein comprising NS3, NS4, NS5 and core polypeptide of an HCV are not disclosed in the application 09,698,874, and 10,357,619 as it was originally filed. Therefore, claimed priority back to the filling date of October 27, 2000 for application SN. 09. 698,874 and/or the filling date of February 03, 2003 for application SN. 10,357,619 have been denied (While the amendment of 10,357,619 on July 14, 2003 added new claims 53-76 including the considered claimed HCV polypeptide comprising NS3, NS4, NS5 and core region, the amendment is as a new matter and will be rejected by the next office action for the application

10, 351,619), the amendment is as a new matter and will be rejected by the next office action for the application 10, 351,619).

4. Therefore, the priority of current application is the filling date of the present application on August 18, 2003

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 2-6 and 8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

7. In the instant case, applicants do not have a possession for the claimed HCV fusion protein consisting essential of an NS3, NS4, NS5a, NS5b and a core polypeptide of HCV as the application originally filed. In re Rasmussen, 650 F.2d 1212, 21 1 U.S.P.Q. 323 (C.C.P.A. 1981). In re Wertheim, 541 F.2d 257, 191 U.S.P.Q. 90 (C.C.P.A. 1976).

8. The written description requirement under Section 112, first paragraph, sets forth that the claimed subject matter must be supported by an adequate written description that is sufficient to enable anyone skilled in the art to make and use the invention. The courts have concluded that the specification must demonstrate that the inventors had possession of the claimed invention as of the filing date relied upon. Although the claimed subject matter need not be described identically, the disclosure relied upon must convey to those skilled in the art that applicants had invented the subject matter claimed. In re Wilder, et al., 222 U.S.P.Q. 369 (C.A.F.C. 1984). In re Werthheim, et al., 191 U.S.P.Q. 90 (C.C.P.A. 1976). In re Driscoll, 195 U.S.P.Q. 434 (C.C.P.A. 1977). Utter v. Hiraga, 6 U.S.P.Q.Zd 1709 (C.A.F.C. 1988). University of California v. Eli Lilly, 1 19 F.3d 1559, 43 U.S.P.Q.Zd 1398 (Fed. Cir. 1997). Amgen Inc. F. Chugai Pharmaceutical Co.

Ltd., 18 U.S.P.Q.Zd 1016-1031 (C.A.F.C. 1991). Fiers v. Stzgano, 25 U.S.P.Q.Zd 1601-1607 (C.A.F.C. 1993). In re Bell, 26 U.S.P.Q.Zd 1529-1532 (C.A.F.C. 1993).

9. To be in the possession of claimed invention, the specification much show there is a significance of conception and reduction to practice as the application was originally filed. This issue is further addressed by the court in Fiers v. Sugano where it was emphasized that "[c]onception is a question of law, reviewed de novo on appeal, and if inventor is unable to envision detailed chemical structure of DNA sequence coding for specific protein, as well as method of obtaining it, then conception is not achieved until reduction to practice has occurred.

10. Vas-Cath. V. Makurkar, 19USPQ2d 111, also clearly states "applicant must convey with reasonable clarity to those skilled in the art, as of the filling date sough, he or she was in possession of the invention. The invention is, for purpose of the 'written description' inquiry, whatever is now claimed." (see page 1117). The specification should "clearly allow person of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See Vas-Cath at page 1116).

11. In the instant case, the specification only teaches that a fusion protein made by HCV NS3, NS4, NS5a and/or NS5b or composition comprising the same. The specification does not teach a fusion protein or composition comprising the fusion protein that contains HCC core antigen in addition to NS3, NS4, NS5a and/or NS5b. The specification does not show that at the application was filed; the application has a possession for having such fusion protein of HCV. The application also does not show that a significance of conception and reduction to practice the claimed invention either. Therefore, Applicants were not in the possession of having such fusion protein or an immunogenic composition comprising same.

12. Moreover, the case law has also made it clear that the requirements for a "written description" and an "enabling disclosure" are separate. The satisfaction of the enablement requirement does not satisfy the written description requirement. See In re Barker, 559 F.2d 588, 591, 194 USPQ 470, 472 (CCPA 1977) (a specification may be sufficient to enable one skilled in the art to make and use the invention, but still fail to comply with the written description requirement). See also In re DiLeone, 436 F.2d 1404, 1405, 168 USPQ 592, 593 (CCPA 1971). For the written description requirement, an applicant's specification must reasonably convey to those skilled in the art that the applicant was in possession of the claimed invention as of the date

of invention. Regents of the University of California v. Eli Lilly & Co., 119 F.3d 1559, 1568, 43 USPQ2d 1398, 1405 (Fed. Cir. 1997); Hyatt v. Boone, 146 F.3d 1348, 1354, 47 USPQ2d 1128, 1132 (Fed. Cir. 1998).

13. In the instant case, while the HCV core antigen polypeptide is known in the art and the method of making such fusion protein can be done in view of state of art. However, it makes no reference to the fusion protein in question. Thus, the claimed invention is still rejected under the written description rather then enablement under 35 USC 112 first paragraph.

Double Patenting

14. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

15. A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

16. Claims 2-6 and 8 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 3-6, 10-11 of copending Application No. 10,281,341. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Double Patenting

17. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686

F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

18. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

19. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

20. An obviousness-type double-patenting rejection is appropriate where the conflict claims are not identical but an examined application claim is not patentably distinct from the reference claim(s) because the examined claim(s) is either anticipated by or would have been obvious over, the reference claim(s). See, e.g., In re Berg, 14U F.3d 1428, 46 USPQZd 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046, 29 USPQZd 2010 (Fed. either anticipated by, 1993); In re Longi, F.2d 887, 225 US/Q 645 (Fed. Cir. 1985). Although the conflicting claims are not identical, they are not patentably distinct from each other.

21. Claim 2 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 41-44 of copending Application No. 10,612,884. The claims 41-44 are also directed to a HCV fusion protein comprising HCV NS3, NS4, NS5a, NS5b and core polypeptide with a particular mutation on NS3 and specific sequence of core antigen. Therefore, it is considered as a species of fusion protein v. s. the generic polypeptide comprising HCV NS3, NS4, NS5a, NS5b and core polypeptide of current application. The claim 2 is anticipated by claims 41-44 of application "884". This is a provisional obviousness-type double patenting rejection because the conflict claims have not in fact been patented.

Claim Rejections - 35 USC § 102

22. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

23. Claim 2 is rejected under 35 U.S.C. 102(b) as being anticipated by Grakoui et al. (J. Virol. 1996, Vol. 67, No. 2, pp. 1385-1395).

24. Grakoui et al. teach a fusion protein comprising HCV polyprotein core, NS3, NS4, NS5a and NS5b, which is produced by the recombinant DNA construct pBRTM/HCV 1-2940, pBRTM/HCV 1-2813 or pBRTM/HCV 1-2508 (See Fig. 1 and Table 2). Therefore, the claimed invention is anticipated by the cited reference.

25. Claim 2 is rejected under 35 U.S.C. 102(b) as being anticipated by Selby et al. (J. Gene. Virol. 1993, Vol. 74, pp. 1103-1113).

26. Selby et al. teach a fusion protein comprising HCV polyprotein core, NS3, NS4, NS5a and NS5b, which is produced by the recombinant DNA construct pEMCV-HCV, or pHCVss or pβglo-HCV (See Fig. 1). Selby et al. also teach that the HCV fusion protein can be used fro produce an antiserum comprising the antibodies against each domain of HCV polyprotein (See section of antiserum on page 1105). Therefore, the claimed invention is anticipated by the cited reference.

27. Claim 2 is rejected under 35 U.S.C. 102(b) as being anticipated by Cheng et al. (Clinical and Diagnostic Virology 1996, Vol. 6, Issues 2-3, pp. 137-145).

28. Cheng et al. teach a fusion protein comprising HCV polyprotein core, NS3, NS4, NS5 (See section of Results). Therefore, the claimed invention is anticipated by the cited reference.

(The Patent Office does not have facilities to perform physical comparisons between the claimed product and similar prior art products.)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

29. Claims 2 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Selby et al. (J. Gene. Virol. 1993, Vol. 74, pp. 1103-1113) and Alvarez-Lajonchere et al. (Mem Inst Oswaldo Cruz. 2002 Jan;97(1):95-99).

30. The claimed invention is drawn to a fusion protein comprising HCV core, NS3, NS4, NS5a and NS5b protein antigens and a pharmaceutical composition comprising the fusion protein and an adjuvant.

27. Selby et al. teach a fusion protein comprising HCV polyprotein core, NS3, NS4, NS5a and NS5b, which is produced by the recombinant DNA construct pEMCV-HCV, or pHCVss or pβglo-HCV (See Fig. 1). Selby et al. also teach that the HCV fusion protein can be used fro produce an antiserum comprising the antibodies against each domain of HCV polyprotein (See section of antiserum on page 1105). Therefore, the claimed invention is anticipated by the cited reference. Selby do not teach to make the fusion protein of HCV as a pharmaceutical composition that further comprises an adjuvant.

31. Alvarez-Lajonchere et al. teach that in general, the immune response induced by HCV antigen is frequently week and transient, They have tested several approaches for immunizing an animal with a different adjuvant in combination with HCV core antigen. They found that both cellular and humoral immune responses were enhanced by using an adjuvant to boost the immune response induced by the HCV core antigen. They concluded that the immune response induced by HCV core antigen could be modified by using an adjuvant (Se e Figs. 1 and 2).

32. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was filled to be motivated by the recited references and to combine the method taught by Selby et al. to prepare the HCV fusion protein and select one kind of adjuvant disclosed by Alvarez-Lajonchere et al. to make an immunogenic composition et al. in order to produce an enhanced immune response absence unexpected result. As there are no unexpected results have been provided, hence the claimed invention as a whole is prima facie obvious absence unexpected results.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bao Qun Li whose telephone number is 571-272-0904. The examiner can normally be reached on 7:00 am to 3:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Housel can be reached on 571-272-0902. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Baoqun Li

Bao Qun Li M.D.
04/18/2005